

CLAIMS

What is Claimed:

1. A lift/tilt assembly for use in a semiconductor wafer processing device, said lift/tilt assembly comprising:
 - a linear way comprising a fixed frame and a moveable frame;
 - a nest rotatably connected to said moveable frame, said nest rotating between a wafer-horizontal orientation and a wafer-vertical orientation;
 - a motor coupled to said linear way; and
 - a lever connected to said nest, said lever providing an offset from true vertical for said nest when said nest is in said wafer-vertical orientation.
2. The lift/tilt assembly of claim 1, further comprising a torsion spring assembly connected to said moveable frame, said torsion spring assembly comprising a torsion spring exerting a forcing bias against said nest.
3. The lift/tilt assembly of claim 1, further comprising a nest motor connected to said moveable frame, said nest motor rigidly connected to said nest to produce rotation in said nest.
4. The lift/tilt assembly of claim 1, further comprising a guide connected to said fixed frame and a ball bearing connected to said lever, said guide

including a smooth surface over which said ball bearing may move.

5. The lift/tilt assembly of claim 4, wherein said guide is a ramp.
6. The lift/tilt assembly of claim 1, further comprising a linear encoder LED assembly mounted to said fixed frame and a linear encoder CCD assembly mounted to said moveable frame.
7. The lift/tilt assembly of claim 1, further comprising a tilt sensor connected to said nest and to said moveable frame.
8. The lift/tilt assembly of claim 1, further comprising a H-bar sensor connected to said nest.
9. The lift/tilt assembly of claim 1, further comprising a tube sensor connected to said moveable frame and a tube sensor receiver connected to said nest.
10. The lift/tilt assembly of claim 1, further comprising a laser mapping unit comprising:
 - at least one transmitter;
 - at least one receiver;

said transmitter disposed to transmit energy through a wafer cassette located in said nest, and said receiver disposed to receive said energy transmitted by said transmitter.

11. The lift/tilt assembly of claim 1, wherein said transmitter transmits optical energy and wherein said receiver receives optical energy.